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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,613

02/08/2006

Osamu Nohara

9369-115US(T37-205100M/AI

2010

570

7590

03/19/2009

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EXAMINER

PANG, ROGER L

ART UNIT

PAPER NUMBER

3655

MAIL DATE

DELIVERY MODE

03/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,613	Applicant(s) NOHARA ET AL.	
	Examiner Roger L. Pang	Art Unit 3655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 5-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The following action is in response to the RCE filed for application 10/567,613 on February 12, 2009.

Election/Restrictions

Claims 5-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 19, 2008.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nohara '912. (Please note, although claim 3 seems to be directed to the unelected species of Fig. 3, the planetary gear of Fig. 1 could be called "spur gearing" if claimed broadly, so the claim will still be treated with art). With regard to claims 1-4, Nohara teaches the speed reducer, but lacks the specific teaching wherein a total reduction gear ratio of a first stage speed reducing portion and a second speed reducing portion is set to 1/6 to 1/60 and a reduction gear ratio of the eccentric oscillating-type speed reduction mechanism is set to 1/50 to 1/40, and the total reduction gear ratio of the speed reducer is 1/1000 to 1/3000 such that a total efficiency of the speed reducer is 77% or more. It would have been obvious to one of ordinary skill in the art at the time of the invention modify Nohara to employ the specific gear reductions, since it has been held that

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where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nohara '912. (Please note, although claim 3 seems to be directed to the unelected species of Fig. 3, the planetary gear of Fig. 1 could be called "spur gearing" if claimed broadly, so the claim will still be treated with art) in view of Takeuchi '356. With regard to claims 1-4, Nohara teaches the speed reducer, but lacks the specific teaching wherein a total reduction gear ratio of a first stage speed reducing portion and a second speed reducing portion is set to 1/6 to 1/60 and a reduction gear ratio of the eccentric oscillating-type speed reduction mechanism is set to 1/50 to 1/40, and the total reduction gear ratio of the speed reducer is 1/1000 to 1/3000 such that a total efficiency of the speed reducer is 77% or more. It would have been obvious to one of ordinary skill in the art at the time of the invention modify Nohara to employ the specific gear reductions, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Nohara also lacks the specific teaching of said input sun gear being fixedly connected (as interpreted by the applicant) to an output shaft of a motor. Takeuchi teaches an exterior gear 33 that is fixedly connected to the output shaft 331 of a motor 330 via a key 332. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Nohara to employ a fixedly connected sun gear and motor output shaft in view of Takeuchi in order to provide a simple assembly means and save on parts.

Response to Arguments

Applicant argues that the application of Nohara with regard to claim 1 is improper because of the following:

- 1) Three-stage speed reducers have not previously been used in yaw drive apparatuses for wind power generation.
- 2) The reduction ratios and efficiency recited in claim 1 derive from unexpected results.

With regard to the first argument, applicant is arguing an intended use for the speed reducer of Nohara. Applicant does not dispute that Nohara teaches all of the claimed structural limitations. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

With regard to the second argument, in paragraph 47 of Nohara, it is stated that "it is possible to make a final speed reduction ratio and a final output torque substantially large by enlarging the reduction ratio based on the driving and driven external gears." Applicant has stated that "there is nearly an infinite number of gear combinations possible in the prior art due to the many adjustable parameters" (pages 11-12 of the response filed on July 18, 2008). Claim 1 would have been obvious because a particular known technique (cited by both Nohara and the applicant) was recognized as part of the ordinary capabilities of one skilled in the art. Achieving a desired ratio is not beyond the skill level of one of ordinary skill in the art.

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With regard to unexpected results, applicant has not established how the claimed combination of transmission ratios achieves "unexpected results" to the prior art or produces a new unexpected result which is different in kind and not merely in degree from the results of the prior art. Changing the known variables of the known transmission is not a patentable limitation.

Applicant's arguments have been considered, but are not persuasive.

Response to Arguments

Applicant argues the following points with regard to the Nohara reference:

- 1) the input sun gear is not fixedly connected to the output shaft of the motor.
- 2) The gear ratios and the total efficiency would not have been obvious.

With regard to Argument 1:

Nohara teaches an input sun gear 49 that is integral with intermediate shaft 47 (paragraph 31). The intermediate shaft rotates with the output shaft 46 of the motor 45 (paragraph 33).

Although Nohara is silent as to the connection itself, it can be seen in Figure 1 that the intermediate shaft/input sun gear is fixedly connected to the motor output shaft via a sleeve similar to sleeve 611 of the cited Minegishi '747 patent (see Fig. 14). The sun gear and output shaft rotate at the same rotational velocity via the connection. However, if applicant still does not believe this fixed connection to read upon the broadly claimed limitation, a supplemental rejection has also been made.

This rejection brings in the teaching of Takeuchi '356, which is not silent to the connection of the gear and motor output shaft. It should be pointed out that the motor output shaft 2 of the present invention is also not integral with the input sun gear 3, as it also requires a fixing means (in the present case, a tightened bolt).

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With regard to Argument 2:

A gear efficiency is affected by a myriad of factors, including teeth number (and thus gear ratio) and actual gear teeth design. It would be obvious for a person of ordinary skill in the art at the time of the invention is able to experiment with these factors and attain a total efficiency $[(\text{output shaft power}/\text{input shaft power}) * 100\%]$ of 77% or more.

With regard to the claimed gear ratios, the transmission can be designed with an infinite combination of gear ratios. As stated before, the gear ratios and the actual gear teeth designs affect the total power transmission efficiency (which can be estimated via appropriate efficiency formula). Therefore, applicant has not proven that these specific ratios would provide unexpected results of the expected power efficiency.

Applicant's arguments have been considered, but are not persuasive.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hashimoto has been cited to show improved power efficiency via gear teeth design.

FACSIMILE TRANSMISSION

Submission of your response by facsimile transmission is encouraged. The central facsimile number is (571) 273-8300. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete

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list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on _____ (Date)

Typed or printed name of person signing this certificate:

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the

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processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roger L. Pang whose telephone number is 571-272-7096. The examiner can normally be reached on 5:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roger L Pang/
Primary Examiner, Art Unit 3655

Roger L Pang
Primary Examiner
Art Unit 3655

March 12, 2009